

**CLAIMS:**

1. A method of restraining fatigue crack growth in a base material, said method comprising the steps of:

(a) preparing a paste in which particles having hardness  
5 not less than that of the base material and an oil having viscosity are mixed with each other; and

(b) applying said paste to a desired portion of said base material.

2. A method of restraining fatigue crack growth according  
10 to claim 1, wherein said particles have diameters of  $2\mu\text{m}$  to  $40\mu\text{m}$ .

3. A method of restraining fatigue crack growth according to claim 1, wherein step (a) includes the steps of:

(a1) adjusting the oil having viscosity of 5,000  
15 centipoises to 15,000 centipoises; and

(a2) mixing said particles into the oil adjusted at step (a1).

4. A method of restraining fatigue crack growth according to claim 2, wherein step (a) includes the steps of:

20 (a1) adjusting the oil having viscosity of 5,000 centipoises to 15,000 centipoises; and

(a2) mixing said particles into the oil adjusted at step (a1).

5. A method of detecting fatigue crack in a base material,  
25 said method comprising the steps of:

(a) preparing a paste in which particles having hardness not less than that of the base material and an oil having

viscosity are mixed with each other;

(b) applying said paste to a desired portion of said base material; and

(c) detecting fatigue crack based on a change in color generated by movement of base material powder to a surface of said paste, said base material powder being produced when said particles grind the base material due to opening and closing of the fatigue crack in said base material.

6. A method of detecting fatigue crack according to claim 5, wherein said particles include white ceramics.

7. A method of detecting fatigue crack according to claim 5, wherein step (a) includes the steps of:

(a1) adjusting the oil having viscosity of 5,000 centipoises to 15,000 centipoises; and

(a2) mixing said particles into the oil adjusted at step (a1).

8. A method of detecting fatigue crack according to claim 6, wherein step (a) includes the steps of:

(a1) adjusting the oil having viscosity of 5,000 centipoises to 15,000 centipoises; and

(a2) mixing said particles into the oil adjusted at step (a1).

9. A paste to be applied to a desired portion of a base material for at least one of restraining fatigue crack growth in said base material and detecting fatigue crack in said base material, said paste comprising:

particles having diameters of 2 $\mu$ m to 40 $\mu$ m; and

an oil having viscosity of 5,000 centipoises to 15,000 centipoises;

wherein said particles and said oil are mixed with each other.

- 5 10. A paste according to claim 9, wherein said particles include white ceramics.